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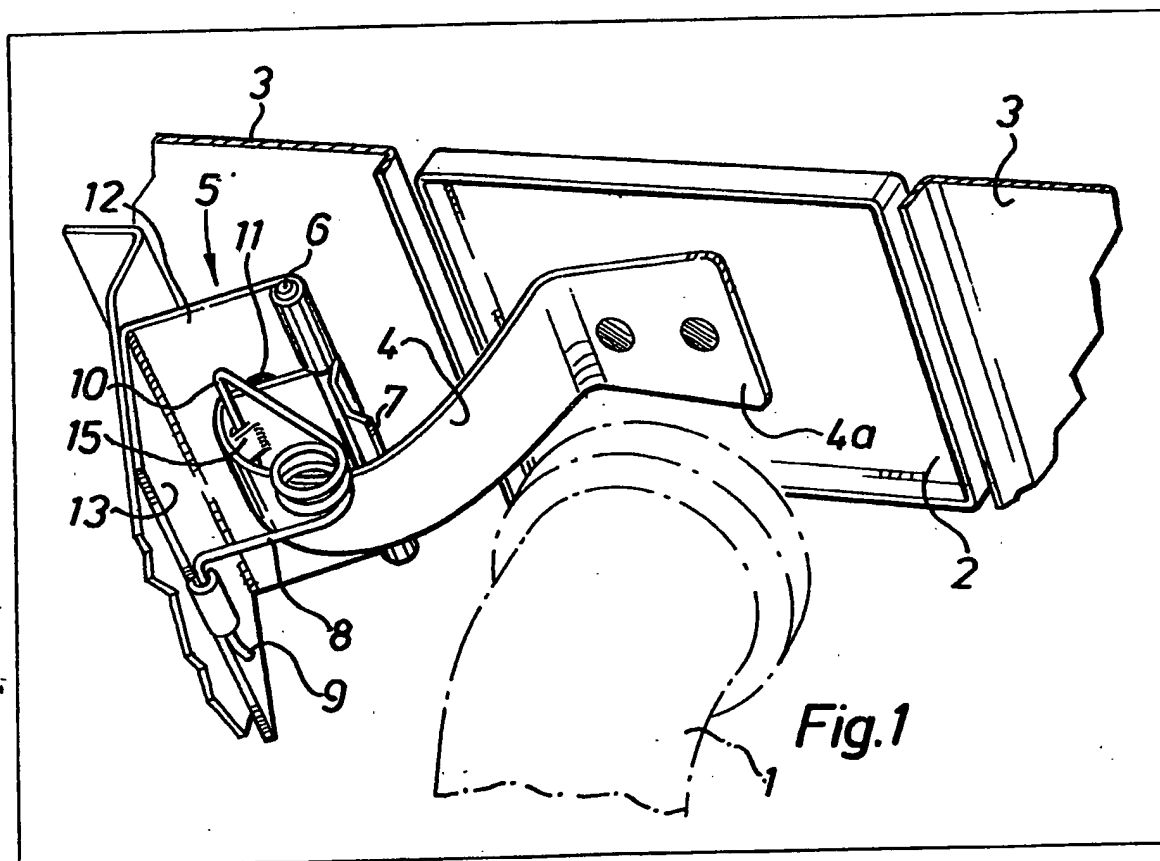
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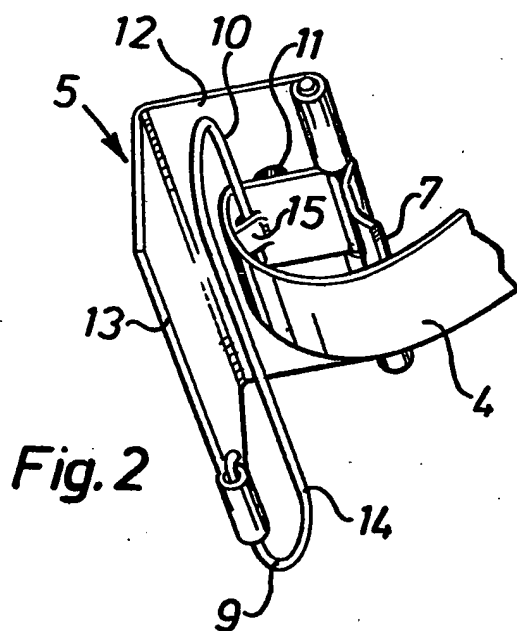
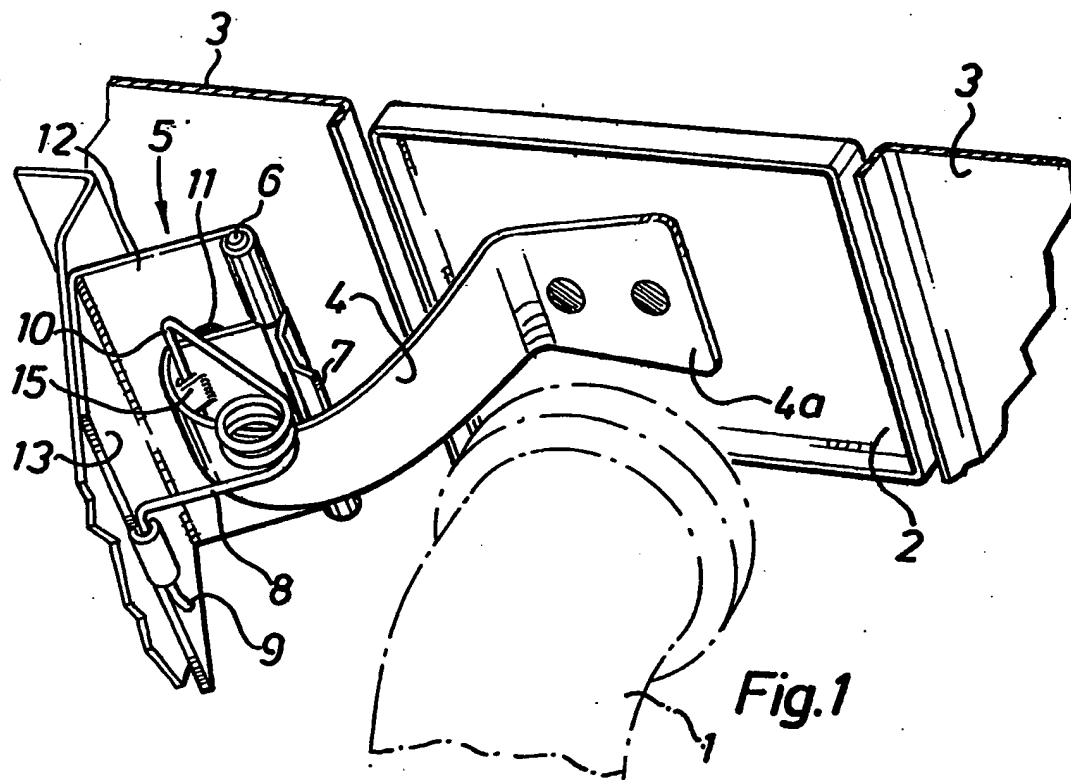
## (54) Spring hinge

(57) A spring hinge, for example, for mounting the flap covering the recess

in which the fuel filler pipe of a motor vehicle is located, comprises a pair of hinge leaves 4 and 5 pivoting around a hinge pin 6. Movement between the open and closed positions of the hinge leaves is controlled by a spring 8 connected between the leaves in such a manner that when the leaves are adjacent to their closed position, the spring biases the leaves into the closed position, and when the leaves are adjacent to their open position the spring biases the leaves into the open position, thus serving to hold the flap, for example, in both its open and its closed position.



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## SPECIFICATION

### Spring hinge

This invention relates to a spring hinge and is particularly concerned with a spring hinge for use with motor vehicles, for example a hinge for closing and allowing access to the fuel filler cap of a motor vehicle.

In many modern motor vehicles it is customary to provide a pipe into which fuel is fed to a tank for ultimate supply to the engine of the vehicle. The pipe is closed by a cap which may be screwed on or otherwise locked in place and the cap and pipe are housed within a recess formed in the body of the vehicle and that recess is desirably closed by a flap. It is necessary to provide a hinge to open the flap thus giving access to the cap which after removal exposes the pipe into which the fuel may then be fed.

It will be appreciated that a hinge of this kind must ensure that the flap is held in a closed position and when access to the fuel filler pipe is required that the hinge may be readily operated to move the flap into an open position and to hold the flap in that open position while fuel is supplied to the vehicle. Thus, the spring hinge preferably enables the flap to move through at least 90°, but a requirement is that the flap is held relatively securely in both the open and the closed positions.

The present invention provides a spring hinge, comprising a pair of hinge leaves linked by a hinge pin and relatively movable thereabout between an open and a closed relative angular position, and a spring connected between the hinge leaves such that both when the hinge leaves are in a position adjacent to the open position and when the hinge leaves are in a position adjacent to the closed position, the spring biases the leaves into the respective adjacent open or closed position.

The spring may be a coil spring having at each end thereof an arm extending generally tangentially to the coils of the spring, each arm being connected to a respective one of the hinge leaves.

Alternatively the spring is a torsion bar extending generally parallel to the hinge pin and having at each end thereof an arm extending generally transversely of the bar and connected to a respective one of the hinge leaves. A stop may be provided preventing movement of the hinge leaves beyond the open position.

Reference is now made to the accompanying drawings in which:—

Figure 1 is a perspective view of a hinge according to the present invention; and

Figure 2 is a part detail view of an alternative construction.

In the drawings a hinge comprises a first member 5 having two limbs 12 and 13 substantially at right angles to each other. The member 5 is adapted for securing to the frame 3

of a motor vehicle by the limb 13. A second hinge member 4 is pivoted relative to the limb 12 by a hinge pin 6. The end of the limb 12 may be rolled over to provide a bore for the hinge pin 6. The second member 4 has a flattened portion 4a adapted to have secured thereto a flap 2 for closing the recess housing a fuel filler pipe 1 of a motor vehicle. When rolling over to form the bore for the hinge pin 6 on the limb 12 of the first member 5, a central portion 7 is severed therefrom and is turned up, as indicated in Figures 1 and 2. This forms a stop for the second member 4 and also provides a gap into which a rolled over portion of the end of the second member 4 may be located, a bore therethrough being brought into line to allow the hinge pin 6 to extend through the bores in both the first and second members.

A spring, which is a coil spring 8 in Figure 1 and a torsion spring 14 in Figure 2, is provided with a first angled limb 9 which is secured to the limb 13 of the first member 5 and also provided with a limb 10 which is secured in a pressed out recess 15 formed in the second member 4.

It will be appreciated from Figure 1 that the flap 2 may be moved to a position to open the recess giving access to the filler pipe 1, and that portion 7 serves as a stop to prevent further movement than that which is desired of the second member 4 relative to the first member 5. In such a position the coil spring 8 will be biasing the second member into a further opening position against the stop 7.

In the closed position, as illustrated in Figures 1 and 2, the second member 4 is prevented from further movement under the influence of the coil spring 8 or the torsion spring 14 by a stop 11 provided on the limb 12 of the first member 5.

## CLAIMS

1. A spring hinge, comprising a pair of hinge leaves linked by a hinge pin and relatively movable thereabout between an open and a closed relative angular position, and a spring connected between the hinge leaves such that both when the hinge leaves are in a position adjacent to the open position and when the hinge leaves are in a position adjacent to the closed position, the spring biases the leaves into the respective adjacent open or closed position.

2. A spring hinge according to Claim 1, wherein the spring is a coil spring having at each end thereof an arm extending generally tangentially to the coils of the spring, each arm being connected to a respective one of the hinge leaves.

3. A spring hinge according to Claim 1, wherein the spring is a torsion bar extending generally parallel to the hinge pin and having at each end thereof an arm extending generally transversely of the bar and connected to a respective one of the hinge leaves.

4. A spring hinge according to any of Claims 1,

2 and 3, wherein a stop is provided preventing movement of the hinge leaves beyond the open position.

5. A spring hinge, substantially as described 5 with reference to, or as shown in, Figure 1 or Figure 2 of the drawings.

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